

CLAIMS

1. An inflatable device, comprising:
 - (A) an inflatable bladder; and
 - 5 (B) a fluid controller comprising:
 - (i) a valve coupled to and supported by the inflatable bladder, the valve being configured and arranged to control the flow of fluid into and out of the bladder, the valve forming a seal to maintain fluid in the bladder in response to fluid pressure within the bladder; and
 - 10 (ii) a mechanical device configured and arranged to open the valve when the mechanical device is actuated.
2. The inflatable device of claim 1, further comprising a compartment coupled to the bladder and configured and arranged to enclose the valve, the compartment being adapted to receive pressurized fluid from a pump.
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3. The inflatable device of claim 1, wherein the valve is a self sealing valve comprising a cover adapted to prevent the valve from opening in the presence of air pressure in the compartment, and wherein the cover and the mechanical device are configured so that when the mechanical device is actuated it biases open the cover.
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4. The inflatable device of claim 3, wherein the self sealing valve further comprises a diaphragm configured and arranged to form the seal in response to fluid pressure within the bladder, and wherein the diaphragm and the mechanical device are configured so that when the mechanical device is actuated it biases open the cover and the diaphragm.
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5. The inflatable device of claim 1, wherein the mechanical device is enclosed by the compartment.
- 30 6. The inflatable device of claim 1, wherein the mechanical device is coupled to the bladder and supported by the bladder.

7. The inflatable device of claim 2, wherein the mechanical device comprises an electromechanical device.

8. The inflatable device of claim 7, wherein the electromechanical device is adapted to 5 open the valve in coordination with the pump, which is adapted to provide pressurized fluid to the compartment, to inflate the bladder.

9. The inflatable device of claim 7, wherein when the electromechanical device is adapted to open the valve, to deflate the bladder with fluid.

10. The inflatable device of claim 1, wherein the pump is coupled to the compartment through a hose.

11. The inflatable device of claim 7, wherein the pump is housed within an acoustical 15 insulative material.

12. The inflatable device of claim 5, wherein the compartment is disposed along or within the profile of the inflatable bladder.

20 13. The inflatable device of claim 1, wherein the inflatable device is a mattress.

14. The inflatable device of claim 10, wherein the mattress comprises supplemental material, and a portion of the fluid controller is at least partially supported by the supplemental material.

25 15. The inflatable device of claim 14, wherein a portion of the pump is at least partially supported by the supplemental material.

16. The inflatable device of claim 1, wherein the pump is supported by the inflatable 30 bladder.

17. An inflatable mattress, comprising:

- (A) a first inflatable bladder;
- (B) a second inflatable bladder disposed adjacent to the first inflatable bladder;
- (C) a fluid controller comprising:

5 (i) a first valve coupled to and supported by the first bladder, the first valve being configured and arranged to control the flow of fluid into and out of the first bladder, the first valve forming a seal to maintain fluid in the first bladder in response to fluid pressure within the first bladder;

10 (ii) a second valve coupled to and supported by the second bladder, the second valve being configured and arranged to control the flow of fluid into and out of the first bladder, the second valve forming a seal to maintain fluid in the second bladder in response to fluid pressure within the second bladder; and

15 (ii) an electromechanical device configured and arranged to open the first valve when the electromechanical device is in a first actuated position and to open the second valve when the electromechanical device is in a second actuated position; and

(D) a compartment coupled to the bladder and configured and arranged to enclose the first valve and the second valve, the compartment being adapted to receive pressurized fluid from a pump.

20 18. The inflatable mattress of claim 17, wherein the compartment is flush with or within the profile of the mattress.

19. The inflatable mattress of claim 18, wherein the compartment is v-shaped.

25 20. The inflatable mattress of claim 17, wherein when the electromechanical device is configured such that in the first actuated position and with pressurized fluid provided to the compartment, the first bladder is filled with fluid and is configured such that when the electromechanical device is in the second actuated position and pressurized fluid is provided to the compartment, the second bladder is filled with fluid.

30 21. The inflatable mattress of claim 17, wherein the compartment is flush with or within the profile of the first bladder and the second bladder combined.

22. The inflatable mattress of claim 17, wherein the electromechanical device comprises an actuator arm to open at least the first valve.

5 23. The inflatable mattress of claim 17, wherein the electromechanical device comprises an actuator arm to open both the first valve and the second valve.

24. The inflatable mattress of claim 23, wherein the actuator arm is accurate.

10 25. An inflatable mattress, comprising:
an inflatable bladder;
an articulation apparatus comprising:
a support structure to support the inflatable bladder above a floor, the support structure having a plurality of regions along a length of the support structure, and
15 at least one joint, each at least one joint being located intermediate adjacent ones of said regions.

26. The inflatable mattress of claim 25, wherein articulation apparatus comprises a motor to move at least one of the regions relative to another of the regions.

20 27. The inflatable mattress of claim 25, wherein the regions consist of a leg region, a torso region, and a head region.

28. The inflatable mattress of claim 25, wherein the inflatable device is a mattress.

25 29. The inflatable mattress of claim 28, wherein the inflatable device is an air mattress.

30. The inflatable mattress of claim 25, wherein the inflatable device is adapted to deflate upon actuation of the articulation device.

30 31. The inflatable mattress of claim 30, wherein the inflatable device is adapted to reinflate upon subsequent actuation of the articulation device.

32. The inflatable mattress of claim 25, wherein at least one of the regions is substantially continuous.

5 33. The inflatable mattress of claim 32, wherein each of the regions is substantially continuous.

34. An inflatable device, comprising
a first inflatable bladder; and
10 a second inflatable bladder disposed adjacent to the first bladder, the first bladder and second bladder being adapted, at corresponding first levels of inflation, to maintain a body in a first body position, and at corresponding second levels of inflation, to maintain a body in a second body position.

15 35. The inflatable device of claim 34, further comprising a comfort layer disposed on at least one of the first bladder and the second bladder.

36. The inflatable device of claim 34, wherein the first body position is prone and the second body position is reclined.

20 37. The inflatable mattress of claim 34, wherein the first level of inflation of the first bladder is greater than the second level of inflation of the first bladder, and the first level of inflation of the second bladder is greater than the second level of inflation of the second bladder.

25 38. The inflatable mattress of claim 34, wherein the first bladder is adapted to support the torso of a user and the second bladder is a pillow.

39. An inflatable body support device, comprising:
an inflatable bladder; and
a base releasably connected the inflatable bladder and adapted to support the
inflatable bladder, the base comprising a compartment disposed beneath the inflatable
bladder.

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40 The inflatable body support device of claim 39, further comprising a frame releasably
connected to the base and supporting the inflatable bladder above the compartment.

10 41. The inflatable body support device of claim 39, wherein the inflatable bladder is
hingedly coupled to the base.

42. The inflatable body support device of claim 39, wherein the inflatable bladder is
hingedly coupled to the base though a frame that is hingedly connected to the base.

15 43. The inflatable body support device of claim 39, wherein the inflatable bladder is an air
mattress.

20 44. The inflatable body support device of claim 39, wherein the inflatable bladder is a
chair.

45. The inflatable body support device of claim 40, wherein the frame is adapted to one of
slide, rotate or elevate the inflatable bladder relative the base.

25 46. The inflatable body support device of claim 45, further comprising one of a rail,
guides or tracks to enable one of the sliding, rotating and elevating of the inflatable bladder
relative the base.

47. The inflatable body support device of claim 46, further comprising a locking
30 mechanism to maintain the inflatable bladder in an elevated position.

48. A method of using a configurable inflatable device comprising an inflatable bladder and at least one shape-defining member that combines with the inflatable bladder such that the overall shape of the inflatable bladder in an inflated condition and in combination with the shape-defining member is substantially different from an inflated shape of the inflatable bladder alone, comprising acts of:

- 5 adapting the at least one shape-defining member to correspond to a first selected shape;
- inflating the inflatable bladder to attain the first selected shape;
- adapting the at least one shape-defining member to correspond to a second selected shape; and
- 10 inflating or deflating the bladder to attain the second selected shape.

49. The method of claim 48, further comprising an act of using the inflatable device with a first part of the body while in the first selected shape and using the inflatable device with a second part of the body while in the second selected shape.

50. The method of claim 48, wherein the first act of adapting forms a device suitable for use with the head and the second act of adapting forms a device for use with one of the back and the legs.

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51. The method of claim 48, wherein the act of inflating the bladder to a first selected shape forms a bolster pillow of a first size, and the act of inflating the bladder to a second selected shape forms a bolster pillow of a second size.

52. The method of claim 48, wherein at least one of the first shape and the second shape is non-cylindrical.

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53. The method of claim 48, wherein at least one fastener is directly connected to the inflatable bladder.

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54. The method of claim 48, wherein the act of adapting the at least one shape-defining member to correspond to a second selected shape comprises adjusting a rigid member.

55. A method of using a configurable inflatable device comprising a bladder, comprising acts of:

5 adapting the bladder to correspond to a first selected shape;
inflating the inflatable bladder to attain the first selected shape;
adapting the bladder to correspond to a second selected shape; and
inflating or deflating the bladder to attain the second selected shape.

56. The method of using the configurable inflatable device of claim 55, wherein one of
10 the acts of adapting the bladder to correspond to a first selected shape and adapting the
bladder to correspond to a second selected shape, comprises an act of folding the bladder.

57. An inflatable air mattress, comprising:
an inflatable bladder; and
15 a heater adjacent to the inflatable bladder.

58. The inflatable bladder of claim 57, wherein the heater is comprised of at least one resistive strip having an adhesive strip disposed on the bladder.

20 59. The inflatable bladder of claim 57, wherein the bladder has a length, and the at least one resistive strip runs along substantially the entire length of the bladder.

60. The inflatable bladder of claim 57, wherein the heater is uniformly disposed along a dimension of the mattress.

25 61. The inflatable bladder of claim 57, wherein the heater is disposed along only a portion of the mattress.

62. A method of using an inflatable device comprising an inflatable bladder, a surface
30 layer, and a first intermediary layer disposed between the bladder and the surface layer,
comprising acts of:
removing the first intermediary layer; and

placing a second intermediary layer in the location disposed between the bladder and the surface layer.

63. The method of claim 62, wherein the first intermediary layer comprises at least one of the following materials: foam, cotton and down.

64. The method of claim 62, wherein the first intermediary layer and the second intermediary layer comprise the same materials as one another.

10 65. The method of claim 62, wherein the first intermediary layer and the second intermediary layer comprise different materials than one another.